Amendments to the Claims

The listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims:

1. (Previously Presented) Osteoinductive material comprising a matrix material and, adsorbed on inner and/or outer surfaces of this matrix material, morphogenetic protein(s), wherein said osteoinductive material is obtained by contacting the matrix material and the morphogenetic protein(s) under suitable conditions to keep the protein stable and dissolved in a solution, thereby allowing the matrix material to become evenly coated with the morphogenetic protein(s), wherein said suitable conditions are

   (a) using a buffer or solvent which is capable of maintaining a pH above 10.3 during the coating procedure, or

   (b) using a buffer or solvent which has an ionic concentration of 20 mmol/l or less and is capable of maintaining a pH below 5.2 during the coating procedure, or

   (c) using a buffer or solvent which has an ionic concentration of 100 mmol/l or less and is capable of maintaining a pH above 9.5 during the coating procedure.

2. (Original) Osteoinductive material according to claim 1, wherein the morphogenetic protein contains at least a 7 cysteine region characteristic for TGF-β superfamily proteins.

3. (Previously Presented) Osteoinductive material according to claim 1, wherein the morphogenetic protein is a mature protein or a biologically active part or variant thereof.

4. (Previously Presented) Osteoinductive material according to claim 1, wherein the morphogenetic protein belongs to the TGF-β-, BMP-, GDF-, activin- or GDNF- family.

5. (Previously Presented) Osteoinductive material according to claim 1, wherein the morphogenetic protein is a dimeric protein.

6. (Previously Presented) Osteoinductive material according to claim 1, wherein the morphogenetic protein is BMP2, BMP7, BMP12, BMP13, MP52 (GDF5) or a biologically active part or variant thereof.

7. (Previously Presented) Osteoinductive material according to claim 1, wherein the morphogenetic protein is a protein lacking the cysteine residue which is responsible for dimer formation in the respective naturally occurring proteins.

8. (Previously Presented) Osteoinductive material according to claim 1, wherein the morphogenetic protein contains a consensus sequence according to

Formula I: $C(Y)_{25-29}CYYYC(Y)_{25-35}XC(Y)z_{,27-34}CYC$ or
Formula II: $C(Y)_{28}CYYYC(Y)_{30-32}XC(Y)_{31}CYC$,

wherein C denotes cysteine, Y denotes any amino acid and X denotes any amino acid except cysteine.

9. (Previously Presented) Osteoinductive material according to claim 1, wherein the protein is a monomeric form of MP52.

10. (Original) Osteoinductive material according to claim 9, wherein the protein is MP52-Ala83 or a biologically active part or variant thereof.

11. (Previously Presented) Osteoinductive material according to claim 1, wherein the matrix material is a biocompatible material.

12. (Previously Presented) Osteoinductive material according to claim 1, wherein the matrix material is a natural material, a modified natural material or a synthetic material.

13. (Previously Presented) Osteoinductive material according to claim 1, wherein the matrix material is a porous material.

14. (Previously Presented) Osteoinductive material according to claim 1, wherein the matrix material comprises at least one of the following substances: a) collagen, b) $Ca(OH)_2$, c) polylactide or polylactide derivatives, d) hyaluronic acid, e) polyoxyethylene polyoxypropylene copolymers f) calcium phosphate, g) a combination of hydroxy apatite and collagen h) a combination of polyglycolic acid and polylactic acid or polylactid derivatives.

15. (Previously Presented) Osteoinductive material according to claim 1, wherein the buffer or solvent used for coating has an ionic concentration of 20 mmol/l or less.

16. (Previously Presented) Osteoinductive material according to claim 1, wherein the buffer or solvent used for coating further comprises saccharides.

17. (Previously Presented) Osteoinductive material according to claim 1, wherein the buffer or solvent used for coating further comprises alcohols or other organic solvents.

18. (Previously Presented) Osteoinductive material according to claim 1, wherein the buffer or solvent used for coating further comprises soaps or syndets.

19. (Previously Presented) Osteoinductive material according to claim 1, wherein the morphogenetic protein(s) is covalently or noncovalently linked to polyethylene glycols.

20. (Previously Presented) Osteoinductive material according to claim 1, wherein the buffer or solvent used for acidic coating contains HCl or sodium acetate.

21. (Previously Presented) Osteoinductive material according to claim 1, wherein the buffer or solvent used for basic coating contains NaOH or sodium carbonate/sodium bicarbonate.

22. (Previously Presented) Process for the production of an osteoinductive material according to claim 1, said process comprising contacting a matrix material with a solution of at least one morphogenetic protein characterized in that substances contained in said solution are selected to enable adjustment of the pH of the solution to below 5.2 even when in contact with the matrix material.

23. (Previously Presented) Process for the production of an osteoinductive material according to claim 1, said process comprising contacting a matrix material with a solution of a morphogenetic protein characterized in that substances contained in said solution are selected to enable adjustment of the pH of the solution to above 9.5 even when in contact with the matrix material.

24. (Currently Amended) A method of treating a patient in need of osteoinduction ~~an indication amenable to treatment with monomeric or dimeric morphogenetic proteins in a patient in need of such treatment~~, comprising administering an effective amount of osteoinductive material of claim 1 to the patient.

25. (Currently Amended) The method according to claim 24, wherein the method ~~is the treatment of~~ treats symptoms or conditions of diseases or abnormal conditions of cartilage, bone, connective tissue including tendon and/or ligament, periodontal or dental tissue, neural tissue, tissue of the sensory system, ~~liver, pancreas,~~ cardiac, or blood vessels~~, renal, uterine and thyroid tissue, skin, mucous membranes, endothelium, epithelium~~.

26. (Currently Amended) The method according to claim 24, wherein the ~~indication is promoting or inducing~~ method promotes or induces ~~nerve growth, tissue repair and regeneration, angiogenesis~~, wound healing including ulcers, burns, injuries or skin grafts, ~~induction of~~ proliferation of progenitor cells or bone marrow cells, ~~for~~ regeneration of functional attachment between connective tissue and bone, cartilage repair, treatment of osteoporosis or osteoarthritis, ~~to correct~~ correction of non-union fractures, acquired or congenital craniofacial, skeletal or dental abnormalities, ~~for~~ or replacement of non-skeletal tissue ~~replacement~~ in plastic or reconstructive surgery.

27. (Currently Amended) The method according to claim ~~24~~ 25, wherein the ~~indication is treating a~~ disease or abnormal condition is caused by ischemic or traumatic injury, degenerative disease, cardiomyopathies, atherothrombotic or cardioembolic strokes, ulceration, cirrhosis, emphysema, cell senescence or quiescence.

28. (Currently Amended) In a method of treating a patient in need of osteoinduction ~~treating a condition susceptible to monomeric or dimeric morphogenetic protein therapy in a patent~~ by administering an effective amount of monomeric or dimeric morphogenetic proteins to the patient, the improvement comprising administering the osteoinductive material of claim 1 to the patient.